

# FACT SHEET

## GeoTech Receives Exclusive NASA License to Commercialize Corrosion Control Technology



GeoTech Chemical Company is manufacturing a coating additive containing the inherently conductive polymer (ICP), Ligno-PANI™ as a key component in the company's new corrosion control product line marketed under the name Catize™. NASA awarded the Ohio company an exclusive license agreement to commercialize Ligno-PANI™, a NASA-patented technology.

The additive is one of the first commercially available conductive polymer technologies designed to utilize monomers that provide the combination of cost efficiency and ease of use. Using a single phase, environmentally friendly process, the patented Ligno-PANI™ technology provides self-doping conductive polymers with unique features, including: water and solvent dispersible; a range of conductivity levels that can be controlled through the polymerization recipe; various combinations of solids and viscosity levels that can be tailored to meet the needs of your applications; co-dispersant chemistry to enable ease of incorporation in existing ink and coating formulations; and highly cost effective per unit of conductivity provided. This groundbreaking technology has proven to dramatically inhibit corrosion by significantly prolonging the migration of rust, translating into extended service life for the treated structure, according to company vice president Christopher Geer.

The inventor of the Ligno-PANI™ technology, Dr. Tito Viswanathan of the University of Arkansas, explained, "beyond basic barrier protection, Catize™ delivers active protection. When a break occurs and the substrate is exposed, the sacrificial properties of Catize™ in the coating inhibit the corrosion process and protect the structure from accelerated deterioration. Catize™ outperforms anything we've seen on the market today."

GeoTech pointed out that a recent study by the American Zinc Association reported that corrosion costs more than \$200 billion annually to the U.S. economy. That's 4.2 percent of the Gross National Product. Beyond the economic concern, volatile organic compounds found in traditional coating systems have become one of the biggest contributors to global warming. Because water-borne paints are more environmentally friendly, they represent the fastest growing segment of the coatings market.

In developing Catize™, the company understood that discovering a viable means to protect exposed metal structures could have both incredible economical and environmental ramifications. Ligno-PANI™, formulated with metal pigments, preferably aluminum, and other materials, is available as a rust-inhibitive concentrate that can be added to almost any coating formulation, transforming it into a cathodic primer. The resulting coatings can be said to display the benefits of both barrier and cathodic protection, with few of the limitations of either.

This technology is superior to zinc-rich technology in several important ways. It is not as difficult to formulate, and does not suffer from the same application problems that zinc-rich primers sometimes do. The conductivity of the polymer itself makes the electrochemical cell much easier to stabilize in the finished coating and the platelet-type particle morphology of aluminum is far superior to the spherical morphology of zinc. GeoTech's product line is designed to enhance existing coating products, whether water-borne, solvent, powder, or ultraviolet (UV) curable coatings. Also, the additive is effective with only one coat, compared to traditional three-coat systems, offering a savings in costs. Catize™ and Ligno-PANI™ are distributed by the Seegott Corporation.

NASA has been working on conductive polymers for many years for corrosion control. The KSC Materials Science Laboratory was interested in antistatic coatings for clean room garments in hazardous atmospheres. The antistatic coating ensures that there is no potential for sparking and igniting a combustible atmosphere. The method developed increases the dispersability and processability of electrically conducting polymers. Unlike other processing methods, this technology is inexpensive and environmentally safe due to its increased dispersability and use of renewable resources.

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